CLAIMS

What is claimed is:

1. A method for channel mixing in a multimedia system, the method comprises:

receiving a set of channels as encoded channel data;

interpreting the encoded channel data to identify a channel of interest of the set of channels based on a specific channel selection request;

processing data of the channel of interest based on type of channel to produce generic data; and

converting the generic data into a stream of data.

2. The method of claim 1 further comprises:

receiving the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of tuners associated

with a multimedia source, and wherein each of the packets includes a header portion and payload portion; and

interpreting the encoding channel data by interpreting information of the header portion of the packets to identify individual channels of the set of channels.

3. The method of claim 2, wherein the interpreting the encoded channel data further comprises:

identifying the channel of interest as one of the individual channels of the set of channels based on the information of the header portion.

4. The method of claim 3 further comprises at least one:

reading an identifier for the channel of interest from the header portion of the packet to identify the channel of interest; and

reading a source identifier from the header portion of the packet to identify the channel of interest.

5. The method of claim 2, wherein the interpreting the encoded channel data further comprises:

identifying, based on the information of the header portion, one of the individual channels of the set of channels that contains a group of compressed video channels, wherein the channel of interest is within the group of compressed video channels; and

isolating the channel of interest from the group of compressed video channels.

6. The method of claim 1 further comprises:

receiving the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of sources, and wherein each of the packets includes a header portion and payload portion;

interpreting the encoding channel data by interpreting information of the header portion of the packets to identify type of data of each channel provided by each of the plurality of sources; and

determining filtering requirements to identify the channel of interest based on the type of data.

7. The method of claim 6, wherein the determining the filtering requirements further comprises at least one of:

when the type of data is multi-channel compressed video, filtering the multi-channel compressed video to produce the channel of interest;

when the type of data is single channel compressed video, passing the single channel compressed video as the channel of interest;

when the type of data is multi-channel digitized video data, filtering the multi-channel digitized video data to produce the channel of interest;

when the type of data is single channel digitized video data, passing the single channel digitized video as the channel of interest;

when the type of data is multi-channel digital audio, filtering the multi-channel digital audio to produce the channel of interest;

when the type of data is single channel digital audio, passing the single channel digital audio as the channel of interest; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

8. The method of claim 1 further comprises:

interpreting the encoded channel data to identify a series of channels of interest from the set of channels based on a corresponding series of channel selection requests;

processing data of each of the series of channel of interest based on the type of channel of each of the channels of the series of channels of interest to produce a series of generic data; and

converting the series of generic data into the stream of data.

9. The method of claim 1, wherein the processing the data of the channel of interest further comprises at least one of:

when the type of data is multi-channel compressed video, converting video data of the channel of interest into generic video data;

when the type of data is single channel compressed video, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is single channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digital audio, converting audio data of the channel of interest into generic audio data;

when the type of data is single channel digital audio, converting audio data of the channel of interest into the generic audio data; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

10. The method of claim 9, wherein the converting to the generic video data further comprises at least one of:

converting the video data of the channel of interest into MPEG formatted video data;

converting the video data of the channel of interest into JPEG formatted video data;

converting the video data of the channel of interest into M-JPEG formatted video data;

converting the video data of the channel of interest into digital RGB video data; and

converting the video data of the channel of interest into digital YCbCr video data.

11. The method of claim 9, wherein the converting to the generic audio data further comprises at least one of:

converting the audio data of the channel of interest into MPG formatted audio data;

converting the audio data of the channel of interest into MP3 formatted audio data; and

converting the audio data of the channel of interest into PCM digitized audio data.

12. The method of claim 1, wherein the converting the generic data into a stream of data further comprises:

determining type of data of the channel of interest; and

converting the generic data into the stream of data based on the type of data.

13. The method of claim 12, wherein the converting the generic data further comprises at least one of:

when the type of data is multi-channel compressed video, converting the generic video data of the channel of interest into specific video data;

when the type of data is single channel compressed video, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is single channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digital audio, converting the generic audio data of the channel of interest into specific audio data;

when the type of data is single channel digital audio, converting the generic audio data of the channel of interest into specific audio data; and

when the type of data is network carried data, passing the network carried data of the channel of interest.

14. The method of claim 13, wherein the converting the generic video data of the channel of interest into specific video data further comprises:

performing a motion prediction on the generic video data to produce motion prediction data;

performing a discrete cosine transform on the motion prediction data to produce DCT data;

quantizing the DCT data to produce quantized data;

zigzag processing the quantized data to produce ZZ data; and

Huffman encoding the ZZ data to produce the specific video data.

15. The method of claim 1 further comprises:

determining the channel of interest is compressed among multiple compressed video channels;

receiving a control signal indicating the type of processing of the data of the channel of interest; and

when the control signal indicates multiple channel processing:

decompressing the multiple compressed video channels to produce multiple channels;

processing data of the of the multiple channels based on the type of channel to produce multiple generic data; and

converting the multiple generic data into the stream of data.

16. A method for channel mixing in a multimedia system, the method comprises:

receiving a set of channels as encoded channel data;

interpreting the encoded channel data to identify type of data of a channel of interest contained within the set of channels based on a specific channel selection request;

separating the channel of interest from the set of channels based on the type of data;

processing data of the channel of interest based on the type of data to produce generic data; and

converting the generic data into a stream of data.

17. The method of claim 16 further comprises:

receiving the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of tuners associated with a multimedia source, and wherein each of the packets includes a header portion and payload portion; and

interpreting the header portion of the packets to identify the type of data for the channel of interest.

18. The method of claim 17 further comprises at least one:

reading an identifier for the channel of interest from the header portion of the packet to identify the type of data for the channel of interest; and

reading a source identifier from the header portion of the packet to identify the type of data for the channel of interest.

19. The method of claim 16 further comprises:

receiving the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of sources, and wherein each of the packets includes a header portion and payload portion;

interpreting the encoding channel data by interpreting information of the header portion of the packets to

identify type of data of each channel provided by each of the plurality of sources; and

determining filtering requirements to identify the channel of interest based on the type of data to provide the separating of the channel of interest from the set of channels.

20. The method of claim 19, wherein the determining the filtering requirements further comprises at least one of:

when the type of data is multi-channel compressed video, filtering the multi-channel compressed video of the set of channels to separate the channel of interest;

when the type of data is single channel compressed video, passing the single channel compressed video as the channel of interest;

when the type of data is multi-channel digitized video data, filtering the multi-channel digitized video data of the set of channels to separate the channel of interest;

when the type of data is single channel digitized video data, passing the single channel digitized video as the channel of interest;

when the type of data is multi-channel digital audio, filtering the multi-channel digital audio of the set of channels to separate the channel of interest;

when the type of data is single channel digital audio, passing the single channel digital audio as the channel of interest; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

21. The method of claim 16 further comprises:

interpreting the encoded channel data to identify a series of channels of interest from the set of channels based on a corresponding series of channel selection requests;

processing data of each of the series of channel of interest based on the type of data of each of the channels

of the series of channels of interest to produce a series of generic data; and

converting the series of generic data into the stream of data.

22. The method of claim 16, wherein the processing the data of the channel of interest further comprises at least one of:

when the type of data is multi-channel compressed video, converting video data of the channel of interest into generic video data;

when the type of data is single channel compressed video, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is single channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digital audio, converting audio data of the channel of interest into generic audio data;

when the type of data is single channel digital audio, converting audio data of the channel of interest into the generic audio data; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

23. The method of claim 22, wherein the converting to the generic video data further comprises at least one of:

converting the video data of the channel of interest into MPEG formatted video data;

converting the video data of the channel of interest into JPEG formatted video data;

converting the video data of the channel of interest into M-JPEG formatted video data;

converting the video data of the channel of interest into digital RGB video data; and

converting the video data of the channel of interest into digital YCbCr video data.

24. The method of claim 22, wherein the converting to the generic audio data further comprises at least one of:

converting the audio data of the channel of interest into MPG formatted audio data;

converting the audio data of the channel of interest into MP3 formatted audio data; and

converting the audio data of the channel of interest into PCM digitized audio data.

25. The method of claim 16, wherein the converting the generic data further comprises at least one of:

when the type of data is multi-channel compressed video, converting the generic video data of the channel of interest into specific video data;

when the type of data is single channel compressed video, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is single channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digital audio, converting the generic audio data of the channel of interest into specific audio data;

when the type of data is single channel digital audio, converting the generic audio data of the channel of interest into specific audio data; and

when the type of data is network carried data, passing the network carried data of the channel of interest.

26. The method of claim 25, wherein the converting the generic video data of the channel of interest into specific video data further comprises:

performing a motion prediction on the generic video data to produce motion prediction data;

performing a discrete cosine transform on the motion prediction data to produce DCT data;

quantizing the DCT data to produce quantized data;

zigzag processing the quantized data to produce ZZ data; and

Huffman encoding the ZZ data to produce the specific video data.

27. The method of claim 16 further comprises:

determining the channel of interest is compressed among multiple compressed video channels;

receiving a control signal indicating the type of processing of the data of the channel of interest; and

when the control signal indicates multiple channel processing:

decompressing the multiple compressed video channels to produce multiple channels;

processing data of the of the multiple channels based on the type of channel to produce multiple generic data; and

converting the multiple generic data into the stream of data.

28. A channel mixer for use in a multimedia system, the channel mixer comprises:

stream parsing module operably coupled to receive a set of channels as encoded channel data, wherein the stream parsing module generates generic data for at least one the channel of the set of channels, wherein the at least one of the channels is determined based on a specific channel selection request; and

data transcoding module operably coupled to convert the generic data of the at least one channel into a stream of data having a specific data format.

29. The channel mixer of claim 28 further comprises:

memory; and

memory controller operably coupled to the memory, the stream parsing module and the data transcoding module, wherein the memory controller controls reading and writing of data to the memory by the stream parsing module and the data transcoding module.

30. The channel mixer of claim 28, wherein the stream parsing module further comprises:

plurality of bit stream modules, wherein each of the plurality of bit stream modules filters the encoded channel data to produce a separate channel of interest based on a corresponding channel selection request of a plurality of channel selection requests; and

processor operably coupled to the plurality of bit stream modules, wherein the processor generates generic data for each of the separate channels of interest based on type of data for each of the separate channels of interest.

31. The channel mixer of claim 30, wherein each of the plurality of bit stream modules further comprises:

interpreter operably coupled to receive a plurality of packets containing the encoded channel data, wherein the interpreter interprets the packets to identify type of data for the channel of interest, and wherein the filtering performed by each of the plurality of bit stream modules is dependent on the type of data.

32. The channel mixer of claim 30 further comprises:

input bit bucket operably coupled to the processor and the memory controller, wherein the input bit bucket provides byte to bit conversion of data stored in the memory.

33. The channel mixer of claim 30 further comprises:

decoder instruction packet module operably coupled to the memory controller and the transcoding module, wherein the decoder instruction packet module coordinates pipelining of data through the transcoding module.

34. The channel mixer of claim 3, wherein the transcoding module further comprises:

MPEG decoding module operably coupled to the memory controller and to the decoder instruction packet module, wherein the MPEG decoding module decodes MPEG encoded video data; and

MPEG encoding module operably coupled to the memory controller and to the decoder instruction packet module,

wherein the MPEG encoding module encodes generic video data into MPEG video data.

35. The channel mixer of claim 30 further comprises:

system bus interface operably coupled to the processor, wherein the system bus interface provides interfacing to at least one of: system processor and system memory.

36. The channel mixer of claim 30 further comprises:

digital to analog converter for the stream of data into analog signals.

37. An apparatus for channel mixing in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive a set of channels as encoded channel data;

interpret the encoded channel data to identify a channel of interest of the set of channels based on a specific channel selection request;

process data of the channel of interest based on type of channel to produce generic data; and

convert the generic data into a stream of data.

38. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to:

receive the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of tuners associated with a multimedia source, and wherein each of the packets includes a header portion and payload portion; and

interpret the encoding channel data by interpreting information of the header portion of the packets to identify individual channels of the set of channels.

39. The apparatus of claim 38, wherein the memory further comprises operational instructions that cause the processing module to interpret the encoded channel data by:

identifying the channel of interest as one of the individual channels of the set of channels based on the information of the header portion.

40. The apparatus of claim 39, wherein the memory further comprises operational instructions that cause the processing module to identify the channel of interest by at least one:

reading an identifier for the channel of interest from the header portion of the packet to identify the channel of interest; and

reading a source identifier from the header portion of the packet to identify the channel of interest.

41. The apparatus of claim 38, wherein the memory further comprises operational instructions that cause the processing module to interpret the encoded channel data by:

identifying, based on the information of the header portion, one of the individual channels of the set of channels that contains a group of compressed video channels, wherein the channel of interest is within the group of compressed video channels; and

isolating the channel of interest from the group of compressed video channels.

42. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to:

receive the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of sources, and wherein each of the packets includes a header portion and payload portion;

interpret the encoding channel data by interpreting information of the header portion of the packets to identify type of data of each channel provided by each of the plurality of sources; and

determine filtering requirements to identify the channel of interest based on the type of data.

43. The apparatus of claim 42, wherein the memory further comprises operational instructions that cause the processing module to determine the filtering requirements by at least one of:

when the type of data is multi-channel compressed video, filtering the multi-channel compressed video to produce the channel of interest;

when the type of data is single channel compressed video, passing the single channel compressed video as the channel of interest;

when the type of data is multi-channel digitized video data, filtering the multi-channel digitized video data to produce the channel of interest;

when the type of data is single channel digitized video data, passing the single channel digitized video as the channel of interest;

when the type of data is multi-channel digital audio, filtering the multi-channel digital audio to produce the channel of interest;

when the type of data is single channel digital audio, passing the single channel digital audio as the channel of interest; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

44. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to:

interpret the encoded channel data to identify a series of channels of interest from the set of channels based on a corresponding series of channel selection requests;

process data of each of the series of channel of interest based on the type of channel of each of the channels of the series of channels of interest to produce a series of generic data; and

convert the series of generic data into the stream of data.

45. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to process the data of the channel of interest by at least one of:

when the type of data is multi-channel compressed video, converting video data of the channel of interest into generic video data;

when the type of data is single channel compressed video, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is single channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digital audio, converting audio data of the channel of interest into generic audio data;

when the type of data is single channel digital audio, converting audio data of the channel of interest into the generic audio data; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

46. The apparatus of claim 45, wherein the memory further comprises operational instructions that cause the processing module to converting to the generic video data by at least one of:

converting the video data of the channel of interest into MPEG formatted video data;

converting the video data of the channel of interest into JPEG formatted video data;

converting the video data of the channel of interest into M-JPEG formatted video data;

converting the video data of the channel of interest into digital RGB video data; and

converting the video data of the channel of interest into digital YCbCr video data.

47. The apparatus of claim 45, wherein the memory further comprises operational instructions that cause the processing module to convert to the generic audio data by at least one of:

converting the audio data of the channel of interest into MPG formatted audio data;

converting the audio data of the channel of interest into MP3 formatted audio data; and

converting the audio data of the channel of interest into PCM digitized audio data.

48. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to convert the generic data into a stream of data by:

determining type of data of the channel of interest; and

converting the generic data of the stream of data into the stream of data based on the type of data.

49. The apparatus of claim 48, wherein the memory further comprises operational instructions that cause the processing module to converting the generic data by at least one of:

when the type of data is multi-channel compressed video, converting the generic video data of the channel of interest into specific video data;

when the type of data is single channel compressed video, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is single channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digital audio, converting the generic audio data of the channel of interest into specific audio data;

when the type of data is single channel digital audio, converting the generic audio data of the channel of interest into specific audio data; and

when the type of data is network carried data, passing the network carried data of the channel of interest.

50. The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to convert the generic video data of the channel of interest into specific video data by:

performing a motion prediction on the generic video data to produce motion prediction data;

performing a discrete cosine transform on the motion prediction data to produce DCT data;

quantizing the DCT data to produce quantized data;

zigzag processing the quantized data to produce ZZ data; and

Huffman encoding the ZZ data to produce the specific video data.

51. The apparatus of claim 37, wherein the memory further comprises operational instructions that cause the processing module to:

determine the channel of interest is compressed among multiple compressed video channels;

receive a control signal indicating the type of processing of the data of the channel of interest; and

when the control signal indicates multiple channel processing:

decompress the multiple compressed video channels to produce multiple channels;

process data of the of the multiple channels based on the type of channel to produce multiple generic data; and

convert the multiple generic data into the stream of data.

52. An apparatus for channel mixing in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive a set of channels as encoded channel data;

interpret the encoded channel data to identify type of data of a channel of interest contained within the set of channels based on a specific channel selection request;

separate the channel of interest from the set of channels based on the type of data;

process data of the channel of interest based on the type of data to produce generic data; and

convert the generic data into a stream of data.

53. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to:

receive the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of tuners associated with a multimedia source, and wherein each of the packets includes a header portion and payload portion; and

interpret the header portion of the packets to identify the type of data for the channel of interest.

54. The apparatus of claim 53, wherein the memory further comprises operational instructions that cause the processing module to identify the type of data by at least one:

reading an identifier for the channel of interest from the header portion of the packet to identify the type of data for the channel of interest; and

reading a source identifier from the header portion of the packet to identify the type of data for the channel of interest.

55. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to:

receive the set of channels by receiving packets of the encoded channel data, wherein the encoded channel data includes channel data from a plurality of sources, and wherein each of the packets includes a header portion and payload portion;

interpret the encoding channel data by interpreting information of the header portion of the packets to identify type of data of each channel provided by each of the plurality of sources; and

determine filtering requirements to identify the channel of interest based on the type of data to provide the separating of the channel of interest from the set of channels.

56. The apparatus of claim 55, wherein the memory further comprises operational instructions that cause the processing module to determine the filtering requirements by at least one of:

when the type of data is multi-channel compressed video, filtering the multi-channel compressed video of the set of channels to separate the channel of interest;

when the type of data is single channel compressed video, passing the single channel compressed video as the channel of interest;

when the type of data is multi-channel digitized video data, filtering the multi-channel digitized video data of the set of channels to separate the channel of interest;

when the type of data is single channel digitized video data, passing the single channel digitized video as the channel of interest;

when the type of data is multi-channel digital audio, filtering the multi-channel digital audio of the set of channels to separate the channel of interest;

when the type of data is single channel digital audio, passing the single channel digital audio as the channel of interest; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

57. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to:

interpret the encoded channel data to identify a series of channels of interest from the set of channels based on a corresponding series of channel selection requests;

process data of each of the series of channel of interest based on the type of data of each of the channels of the series of channels of interest to produce a series of generic data; and

convert the series of generic data into the stream of data.

58. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to process the data of the channel of interest by at least one of:

when the type of data is multi-channel compressed video, converting video data of the channel of interest into generic video data;

when the type of data is single channel compressed video, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is single channel digitized video data, converting video data of the channel of interest into the generic video data;

when the type of data is multi-channel digital audio, converting audio data of the channel of interest into generic audio data;

when the type of data is single channel digital audio, converting audio data of the channel of interest into the generic audio data; and

when the type of data is network carried data, passing the network carried data as the channel of interest.

59. The apparatus of claim 58, wherein the memory further comprises operational instructions that cause the processing module to convert to the generic video data by at least one of:

converting the video data of the channel of interest into MPEG formatted video data;

converting the video data of the channel of interest into JPEG formatted video data;

converting the video data of the channel of interest into M-JPEG formatted video data;

converting the video data of the channel of interest into digital RGB video data; and

converting the video data of the channel of interest into digital YCbCr video data.

60. The apparatus of claim 58, wherein the memory further comprises operational instructions that cause the processing module to convert to the generic audio data by at least one of:

converting the audio data of the channel of interest into MPG formatted audio data;

converting the audio data of the channel of interest into MP3 formatted audio data; and

converting the audio data of the channel of interest into PCM digitized audio data.

61. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to convert the generic data by at least one of:

when the type of data is multi-channel compressed video, converting the generic video data of the channel of interest into specific video data;

when the type of data is single channel compressed video, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is single channel digitized video data, converting the generic video data of the channel of interest into the specific video data;

when the type of data is multi-channel digital audio, converting the generic audio data of the channel of interest into specific audio data;

when the type of data is single channel digital audio, converting the generic audio data of the channel of interest into specific audio data; and

when the type of data is network carried data, passing the network carried data of the channel of interest.

62. The apparatus of claim 61, wherein the memory further comprises operational instructions that cause the processing module to convert the generic video data of the channel of interest into specific video data:

performing a motion prediction on the generic video data to produce motion prediction data;

performing a discrete cosine transform on the motion prediction data to produce DCT data;

quantizing the DCT data to produce quantized data;

zigzag processing the quantized data to produce ZZ data; and

Huffman encoding the ZZ data to produce the specific video data.

63. The apparatus of claim 52, wherein the memory further comprises operational instructions that cause the processing module to:

determine the channel of interest is compressed among multiple compressed video channels;

receive a control signal indicating the type of processing of the data of the channel of interest; and

when the control signal indicates multiple channel processing:

decompress the multiple compressed video channels to produce multiple channels;

process data of the of the multiple channels based on the type of channel to produce multiple generic data; and

convert the multiple generic data into the stream of data.